

BRIEF CONSIDERATIONS

ON

DISEASES OF THE EAR.

- I.—IN RELATION TO LIFE ASSURANCE.
- II.—ON THE NECESSITY FOR THEIR
EARLY TREATMENT IN CHILD-
HOOD.
-

BY

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PREFACE.

THE first of these articles,—that on “Suppuration of the Middle Ear in relation to Life Assurance,” was recently published in the *British Medical Journal*, and elicited so much attention that several letters were communicated on the same subject. I have been led to reprint it in the belief that the topic may prove interesting to Actuaries, Directors, Medical Referees, and others interested in Life Assurance. Some readers may be inclined at first sight to consider the subject one of slight importance, and by others it may be suggested that if every doctor were allowed full scope for the exercise of his fancies or hobbies, no life would ever be passed as first class; I nevertheless venture to think that I have brought forward sufficient facts and arguments to prove that persistent Otorrhœa should be gravely considered by every medical referee, and that in many cases it should be held as a bar to first-class Insurance. There is at present a keen and unhealthy competition amongst many offices for “new business,” and not a few individuals actively con-

nected with Insurance would probably wish to see medical hindrances lessened rather than increased. I am, however, of opinion, that though an additional premium may balance the risk of such an office on a few cases, a company assuring a majority of second-class lives—and but too many are in that precarious position—must sooner or later lose repute.

The second article, “On the Necessity for Prompt Treatment of Deafness in Childhood,” was communicated to the British Medical Association at its recent meeting at Sheffield. I shall be glad if my very brief remarks serve to call more attention to the important matters so imperfectly treated in the following pages.

15, WEYMOUTH STREET, PORTLAND PLACE, W.

August, 1876.

SUPPURATION
OF
THE MIDDLE EAR
IN RELATION TO
LIFE ASSURANCE.

*(Reprinted from the "British Medical Journal," June 17th, 1876 ; and
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SUPPURATION OF THE MIDDLE EAR

IN RELATION TO

LIFE ASSURANCE.

AMONG the various, and in some instances vexatiously minute, forms of questions propounded by different Life-offices for the guidance of their medical examiners, I believe, in very many cases, the question, "Have you ever had a discharge from the ear?" is omitted. Now, it may be considered that this subject would be included in the general question, "Have you had any complaint not already mentioned?" but, from constant experience of aural patients, I am confident that very few would volunteer any information on the subject, as many people appear to consider a slight running from the ears as a normal and even healthy condition; and, further, were the fact admitted, many medical practitioners treat otorrhoea with such indifference that they would probably pass the matter by as unworthy of investigation.

I propose, therefore, to demonstrate that the subject is one of great importance in the prognosis of the probabilities of a life being "good," and to suggest that, in a doubtful case, the verdict should be held in

abeyance until the suspected ear has been carefully examined and tested. I can well imagine the medical referee objecting to make a tedious examination with the aural speculum and other tests, in addition to his multifarious professional and secretarial duties, for the ordinary fee of a guinea, or, in some cases, for as little as half a guinea; yet the subject is of the greatest importance both to the office and to the proposer.

The causes of chronic suppuration of the middle ear are acute and subacute catarrhal inflammation, and acute suppurative inflammation of the tympanum, which may result from small-pox, scarlet fever, measles, diphtheria, pneumonia, ordinary catarrh, mechanical injuries, and gouty, scrofulous, or syphilitic dyscrasia: the results are polypi and exostoses, disease of the mastoid cells, caries and necrosis, meningitis, cerebral and cerebellar abscess, pyæmia, phlebitis, and paralysis, or even possibly insanity.

Several medical *confrères* connected with Insurance companies, with whom I have discussed this matter, have observed, that one would be sure to find out the discharge, without putting a direct question, as otorrhœa is only a manifestation of an obviously scrofulous constitution, or that the resulting deafness would betray the patient. Such is not practically the case, as numberless cases of otorrhœa occur in otherwise perfectly healthy subjects, the result of fevers, catarrh, &c., occurring in early childhood; and a patient may have very good hearing with perforations in both

drumheads, and in fact is himself often quite unaware or oblivious of his defect ; on the other hand, one ear may be perfectly sound and the other extensively diseased.

The late Mr. Toynbee* and Dr. Roosa,† the talented New York aurist, have published tables, the one containing the histories of nineteen, and the other of forty cases of fatal cerebral disease the result of tympanic affections ; from which it may be seen that death may occur from chronic aural disease at any age, and at any period from the commencement of the discharge. Mr. Toynbee cites a case, terminating fatally after the existence of otorrhœa for thirty-five years, and Dr. Roosa one after forty-one years. It is thus evident that chronic suppuration may lie dormant for years, and may then be kindled into a most fatal disease, either by some accidental circumstance, as exposure to cold, an injury to the head, a deteriorated state of health, or by the mechanical results produced by the affection itself, and the neglect of proper precautionary treatment.

A careful consideration of the anatomy of the tympanum will at once show what a dangerous locality it is in which to have a chronic suppuration as a constant inhabitant ; in fact, I am acquainted with no other region of the body which is in relation with such

* "Diseases of the Ear," p. 345. London : Lewis. 1868.

† "Treatise on Diseases of the Ear," 2nd edition, p. 452. New York : Wood. 1872.

terribly vital parts. The roof of the tympanum is in contact with the meninges of the brain; the bone is here often thin and porous, or even entirely absent, so that the tympanum actually forms a portion of the cavity of the cranium. This is a most significant anatomical fact, and one probably hardly sufficiently borne in mind.

The floor of the tympanum is sometimes bony, sometimes membranous, and, lying lower than the floor of the external auditory meatus and the orifices of the mastoid cells and Eustachian tubes, is frequently the seat of purulent accumulations in suppuration of the middle ear, which may result in phlebitis of the jugular vein. The inner wall is the outer boundary of the labyrinth, and is in front of the promontory in contact with the carotid artery; caries in this situation may produce hæmorrhage from the carotid, or suppuration extending through the labyrinth into the cavity of the skull. The posterior wall opens into the mastoid cells, which are bounded internally by the lateral sinus—a consideration of importance in suppuration of the mastoid, or in attempts to remove polypi springing from this locality. Polypi and exostoses of the tympanum, produced by the irritation of the chronic suppuration, may both prove fatal, either by pressure and caries, or by blocking up the discharge and producing meningitis; the pus in these cases rarely finds its way through the Eustachian tubes, in opposition to what one would at first sight expect, as

they are generally rendered impervious by the long-continued inflammatory processes. The mastoid cells are generally more or less affected in a supuration of the tympanum; but at any time a more dangerous affection may be lighted up; either acute periostitis or caries, from accumulation of the discharges, both of which frequently prove fatal from extension to the meninges, especially in cases where the gravity of the premonitory symptoms has not been early recognized and actively treated. Caries of any portion of the temporal bone may take place, and is always dangerous, as it not infrequently results in meningitis, abscess, hæmorrhage, or phlebitis. It is not at all easy to determine the existence of caries in many cases, as the probe cannot be used with anything like the same degree of boldness as in other parts. If a supuration persistently resist treatment, caries, however minute it may be, of some portion of the bone probably exists: caries even of the external meatus, from the proximity of the dura mater to the upper wall and of the mastoid cells, may produce meningitis. Pyæmia producing abscesses in other parts of the body also occurs, probably from the entrance of pus into the circulation through the mastoid veins or lateral sinus.

One of the most interesting facts in connection with the subject of chronic aural disease is its connection with cerebral abscess; for, from the published cases of German and English authors, it appears that from one-

third to one-half of the cases of abscess of the cerebrum arise from aural disease. This is readily understood, if we consider the intimate connection of the dura mater with the roof of the tympanum, and might be considered alone sufficient to invest the subject of otorrhœa with importance. There is usually meningitis in connection with the site of the abscess ; but sometimes the membranes are healthy, and even a portion of healthy brain-substance may intervene between the temporal bone and the abscess. Collections of pus are also not at all uncommon in the cerebellum after chronic disease of the mastoid cells ; and here occurs another possible source of error in prognosis ; the discharge, when investigated, may appear to come from the meatus only, as the membrane is seen to be intact, yet there may be in such a case caries of some portion of the temporal bone and disease in the mastoid cells, without perforation of the drumhead. Such cases are rare, though they are on record. Apparently, no rule can be laid down regarding the danger of necrosis of different portions of the temporal bone ; in many cases, a fortunate kind of hyperplasia takes place around the tympanum, and shuts it off from its perilous neighbours ; the ossicula may be discharged, and even the cochlea and labyrinth, without any bad symptoms, beyond the loss of hearing, supervening.

If the perforation in the drumhead be small or blocked up by granulations requiring considerable force to blow air and the discharges through it, the

prognosis is more unfavourable than in the case of a large perforation or entire absence of the membrane, as it is probable that at some future time, the exit of the matter will become impeded, with possibly serious results. I trust that the foregoing remarks have demonstrated the importance of investigating otorrhœa in connection with Assurance, and I would suggest that no life should be certified as first class or even second class in whom examination indicates a suspicion of caries or the existence or recent occurrence of anything like an inflammatory process. I shall be glad if the subject elicit opinions from members of the profession engaged in life examinations.

NOTE.—Since this article appeared in the *British Medical Journal*, I have learnt that Dr. Cassells read a paper before the Medico-Chirurgical Society of Glasgow, in the early part of this year, on the importance of investigating Ear Diseases in relation to Life Assurance; and I am glad to find that so able and painstaking an aurist coincides with me in considering the subject one worthy of the most careful consideration.

MEMORANDA

ON

OTORRHŒA IN RELATION TO INSURANCE.

(Communicated to the Editor of the "*British Medical Journal*,"
July, 1876.)

THE question of otorrhœa in relation to life-insurance, so well considered by Dr. Llewelyn Thomas in the *Journal* of June 17th, is no doubt of great importance to every life-office; although this chronic complaint may, perhaps, be rightly supposed to be included in the general question, "Have you any complaint not already mentioned?" and the negative answer to it may be plainly and honestly given, because many patients suffering from chronic otorrhœa may not have any idea of the serious consequences to which an apparently innocuous running from the ear might occasionally expose them. I think that, for the reasons concisely expressed by Dr. Ll. Thomas, insurance offices ought to be greatly interested in having a direct and short question in regard to this symptom put to every patient presenting himself at their offices. There is no doubt that death may occur from such a trifling cause as an habitual running from the ear; and well-authenticated statistics fully corroborate this statement. A simple chronic otorrhœa of course needs but a proper though possibly slight exciting cause to be suddenly converted into a very grave and fatal disease, which, from its past duration and localization, has made of the canalis auditorius and the tympanum a *locus minoris resistentiæ* upon which any cold, especially in a deteriorated state of health, or any injury, may seize immediately and preferentially. We all know what dangerous anatomical neighbours the internal ear has, as Dr. Ll. Thomas has well demonstrated in his article.

We further know how serious the pathological changes are in these parts, and how difficult it is to obtain any good results by treatment, if the inflammation and suppuration have settled in the internal parts. Between bone and membrane the matter creeps up ; and, wherever it is opposed on its way, great pressure may be caused locally on the membrane ; and an abscess may eventually burst it, invading the brain-substance directly. All these terrible dangers probably never present themselves to those who suffer from habitual otorrhœa ; and no wonder, because the discharge is so slight, and has existed so long. Thus some may ask, How can such a bagatelle influence the life to be insured and the interests of the company ? Surely the patient may be excused in reasoning thus ; but can any medical practitioner look indifferently on such important and vital points, and claim at the same time to protect conscientiously the interests of his clients ? I think with Dr. Ll. Thomas, that, for the protection of the life-offices, the above particular question ought to have its separate place amongst the other interrogatories.

VICTOR JAGIELSKI, M.D., M.R.C.P. Lond.,

*Physician to the Infirmary for Consumption and Diseases
of the Chest.*

I HAVE read with considerable interest a carefully-written paper by Dr. Llewelyn Thomas in the *Journal* of June 17th, on Suppuration of the Middle Ear. I fear that the symptom of a discharge from the ear does not meet with the attention either from the profession or from the public which its possible results undoubtedly demand. In fact, amongst the public a foolish idea is very prevalent that a discharge from the ear is either healthy, or that any attempt at arresting its course may be attended with untoward results ; and I believe it is also not uncommon for surgeons to assure an anxious relative that the little patient will probably grow out of it ; which is, unfortunately, rarely the case.

It is certainly a matter worthy of the most careful consideration, that disease of the tympanum is, according to statistics, the most frequent cause of so fatal a disease as cerebral or cerebellar abscess. An interesting physiological fact is also mentioned by Dr. Thomas: that the pus rarely finds exit by the Eustachian tube; and of this he probably gives the true explanation, that in most cases the tube is rendered impervious by the accompanying inflammatory processes. Dr. Hughlings Jackson some years ago, in the *Journal*, drew attention to certain epileptiform convulsions occurring in connection with discharges from the ear; and strongly urged that, in all cases of hemiplegia in children, the ear should be examined; and that, in such necropsies, the possibility of venous thrombosis from aural disease should be borne in mind. I certainly agree with Dr. Thomas in his suggestion that insurance companies should insert in their forms a question on the subject of otorrhœa, as it is abundantly proved that death may occur as an indirect result of otorrhœa at any period or lapse of time after its first appearance.

EDWARD J. NIX, L.R.C.P., L.R.C.S. Edin., etc.

I HAVE read with much pleasure the article by Dr. Thomas, in the *Journal* of June 17th, on "Suppuration of the Middle Ear in relation to Life-Insurance." I know that each specialist must have his own hobbyhorse; but if we, as ordinary medical examiners, are expected to ask questions, or critically examine each organ or cavity separately, ours would not be an easy task, and there are few lives we could recommend as absolutely safe, and not doubtful in some part. It is a good plan to adopt the rule which is followed by some insurance offices, viz., that of having the candidate examined by the medical referee for the district, and of having a separate private report from the ordinary medical attendant of the candidate, as there are some diseases of which only the "family doctor" is cognizant, and an account of which

no amount of cross-examination on the part of the medical referee will elicit. I refer particularly to specific affections and uterine diseases. *Apropos* of this, I will refer to a case now *sub judice*, which has come under my own observation. * * * *
 This may be an unusual case, and, as far as I can judge, shows a want of precaution on the part of the society effecting the insurance, as the patient herself and her friends, and also the medical referee, considered that she was in a fair state of health. I attended the patient up to the time of her death, but the first acquaintance I had of the fact of the insurance was when I was asked to give a death-certificate. Cases similar to those referred to by Dr. Thomas and by myself can hardly be safely answered by the general questions : “Are there any evidences of caries or diseased bone ?” and “Have you reason to suspect uterine disease ?” as, in the one instance, otorrhœa, and, in the second, leucorrhœa, are very general symptoms.

ARTHUR UNDERHILL, B.A., M.B., Tipton.

ON THE NECESSITY

FOR THE

EARLY TREATMENT OF DEAFNESS
IN CHILDHOOD.

(Communicated at the Annual Meeting of the British Medical Association at Sheffield, 1876.)

ON THE
NECESSITY FOR THE EARLY TREATMENT
OF DEAFNESS IN CHILDHOOD.

WHEN a young patient is brought to a surgeon for the treatment of deafness, otorrhœa, polypus, or other chronic aural malady, the almost invariable statement is volunteered, that the parents thought the child would “grow out of it” as it got stronger, and that they had been told that the ears should on no account be “tampered with,” and, *mirabile dictu*, I have also been several times assured that, in the case of girls, the friends had been advised that the deafness would probably disappear on the advent of the catamenia. It is hardly necessary to point out that no surgeon would permit such a *laissez-faire* style of procedure with an ophthalmia, an abscess in a joint, a contracted tendon, or any other infantile deformity or disease brought under his notice ; but the principles and practice of Aural Surgery have, till the last few years, been so generally neglected in this country, as to warrant me in fearing that incipient aural diseases are frequently treated with the most lamentable nonchalance by both patients and their medical attendants. It is

probable that a deaf person is a greater nuisance to society than one who is blind or deformed, and on this account alone it is surprising that parents do not recognize the importance of prompt attention to defective hearing in their children; another fact which should urge them to the early recognition and treatment of deafness in the young, but which is too generally overlooked, is that if a child is deaf in its earlier years, it acquires what may be termed a habit of deafness, the auditory nerve never having been properly developed and educated; and this without there being any serious actual structural disease; I have frequently observed that a patient who has been deaf from childhood, and who can hear a watch ticking at six or eight inches from the ear, is far more deaf to conversation than one who has become deaf at adult age, and who can only hear a watch at one inch, or on contact with the cranium, simply because, in the first instance, the faculty of discriminating modulations of sound has never been exercised to maturity.

With the exception of those cases where the labyrinth or ossicula has been utterly destroyed and discharged during scarlet fever, or where deafness has resulted from typhus or convulsions, the treatment of deafness in young persons gives most encouraging, and, in some cases, even brilliant results, fully equal to those obtained in ophthalmic or orthopædic surgery.

I am desirous of directing the attention of practitioners to the fact that, at the outset of aural disease, much may be done in arresting, curing, and, above all, in anticipating morbid processes, as the strength of a specialist should lie not in the fact that he possesses knowledge which others have not, but that he has constant opportunities of investigating and treating certain forms of disease. I would here quote the words of Dr. Cassells :*—"Ear diseases do not of themselves tend towards natural cure, but to become progressively worse, and more serious in their consequences; and further, that of the diseases of the ear amenable to our art, those alone are preventable and curable which admit of surgical treatment."

In children even more than in adults the key to the treatment of most aural diseases is the condition of the Eustachian tubes. Partial closure of the tubes occurs in the most trifling catarrhs, either with or without enlargement of the tonsils; and it is most common for children, especially if in a weakly or scrofulous state, to become repeatedly deaf at every fresh cold, the mother thinking little of it, the hearing fluctuating so frequently, till at last the deafness becomes persistent, or after two or three attacks of ear-ache a slight discharge takes place, with rupture of the drum-head, which, if still neglected, probably leads to a permanent impairment of hearing,

* "On Conservative Aural Surgery."

constant otorrhœa, or polypus. Pain in the ear in children should never be overlooked : it always has a signification, and is a most important warning of tympanic congestion. True aural neuralgia is very rare, except in specific cases.

If the membrane be examined during an ordinary attack of ear-ache, the vessels of the malleus will almost invariably be found injected, and this condition will be frequently associated with more or less Eustachian obstruction and tenderness of the meatus. It may be here remarked, that it is rare to find a patient under fifteen years of age complaining of tinnitus, though it is a common accompaniment of Eustachian obstruction in adults.

Closure of the tubes, though frequently most difficult to overcome in adults, is in children easily conquered by the operation of inflating the tympanum. Simple as is this process, it is, considering its great value, apparently but little in general use in this country. The patient should be directed to fill his mouth with water ; the nozzle of a Politzer air-bag is placed in one nostril and both nostrils being closed by the fingers of the left hand of the operator, the air-bag is firmly compressed with the right hand, the patient is told to swallow, and a blast of air is driven at the same moment into the Eustachian tubes. In very young children the water may be dispensed with, as the child generally attempts to cry or utter some exclamation on the introduction of the air-tube into

its nostril ; thus involuntarily closing the nasal aperture of the pharynx and exposing the Eustachian orifices to the current of air. The result is generally instantaneous and most gratifying to the friends ; the child, who was perhaps previously stupidly deaf, now hears clearly, and is often quite frightened at the unusual sounds which break in upon him.

This pleasing change, to the disappointment of the parent, gradually wears off in 24 or 48 hours, and the child may become almost as deaf as before ; but supposing the obstruction to be uncomplicated, a repetition of the inflation three or four times a week will soon overcome it, and the cure will become permanent. Treatment should be supplemented by the use of astringent gargles or lozenges where indicated, and by the administration of iron, tonics, cod-liver oil, &c. In a few cases one inflation suffices. In certain cases, where the tonsils are enlarged, they should be removed and inflation of the Eustachian tubes pursued for a short time after the parts are healed. There can be no doubt that one reason why the valuable operation of excision of the tonsils has fallen to some extent into disrepute for the cure of certain cases of deafness, is because this necessary after-treatment has not been pursued, and the benefit therefore has been but partial.

If the child is old enough to understand the method, vapour inhalations of benzole or of creasote and chloroform, are of great assistance in the cure.

The patient should be directed, when the mouth is full of steam, to close the nose and mouth, and by Valsalva's simple method of making a forcible expiratory effort, drive the vapour into the tympanum. This treatment is very valuable to adults, many cases of long standing always finding relief from the deafness and tinnitus for some hours after even the first inhalation, and many others deriving permanent benefit. In children, if inflation and inhalations are regularly used, the Eustachian catheter is rarely necessary, which is certainly a matter for congratulation, as its use is not always easy even in adults, and to the patient it is always eminently disagreeable, and in my opinion not seldom harmful and frequently painful.*

A certain number of cases of otorrhœa,—probably one-fifth—arise from the meatus or outer surface of the membrane, and may be easily cured; but every case of running from the ears should be carefully examined, as a small perforation by early treatment, may frequently be closed. If, however, the discharge go on for some years even without the occurrence of caries, it is very difficult to arrest it, as the mucous membrane of the tympanum becomes extensively diseased, the drum-head becomes soddened and

* I am glad to find that my colleague, Mr. Lennox Browne, in a paper read by him at Sheffield, on the treatment of Post-nasal Catarrh in relation to deafness, confirms me in this opinion, as the result of his independent experience.

devitalized, and a habit of suppuration is established, the discharge repeatedly reappearing after several apparent cures. I may here remark on the frequent use of painful counter-irritations for the cure of otorrhœa—the practice is perfectly useless, and causes unnecessary distress. In fact, there are few cases of ear-disease in which it is beneficial, warm injections and instillations being of far more service.

Any attempt at cleansing the tympanum, or applying any medicament to it, is of little avail without inflation is regularly pursued at the same time. In obstinate cases the ear should be filled with some astringent lotion, packed with wool,* and inflated through the tubes several times and forcibly. This treatment should always be pursued after the removal of polypi or granulations. The parents of a child will sometimes express a doubt as to the desirability of arresting a discharge, as they have observed that if the running ceases the child becomes deafer, peevish, and drowsy, and even in some cases state that convulsions so result. Now this process of reasoning, though natural, is highly fallacious and dangerous. The phenomena described are curious and remarkable, and

* The practice of stuffing the ears with wool to conceal a discharge, or with the idea of protecting the affected ears against the cold, is most injurious, and even dangerous, as the most serious brain complications may result from the retention of the discharges ; and the constant presence of the matter effectually prevents the possibility of a cure.

possess great pathological interest. On the cessation of the discharge a metastasis to the membranes of the brain takes place, and the situation is a very critical one. The diseased tympanum is of course the exciting cause of this passive meningitis, and the most strenuous efforts should be made to cure this focus of ever-recurring danger.

Cases of fatal meningitis or pyæmia with very slight symptoms are by no means rare after the existence of otorrhœa for a year or two, and probably the cause of many such cases is entirely overlooked: epileptiform seizures in children may also be occasionally traced to the tympanic disease. A combination of tannic and carbolic acids in oil I find the best application in the more recent and uncomplicated cases of otorrhœa, the ear being first syringed with a warm permanganate of potash solution. As a warning, I may mention that I have known patients to accidentally rupture a healthy drum-head, while practising Valsalva's method, they having at the same time placed a finger in the ear: the compressed air preventing the outward expansion of the membrane, rupture is the natural consequence. It is probable that in children as in adults, accumulations of wax are rarely the sole cause of deafness, as on removal of the wax some deafness usually remains, there being concurrently slight catarrh of the tympanum and obstruction of the tubes. Collections of wax hardly ever occur in a perfectly normal ear; either

the increased heat of the parts acts upon the wax, or the alterations in the blood-supply affect the ceruminous glands. It is common to find patients, after the complete removal of the wax, still declaring that there must be something left in their ears, as, owing to the co-existing tympanic congestion, they experience an annoying sense of fulness and ringing in the ears, the deafness being only partially relieved.

In young patients suffering from hereditary specific disease the surgeon frequently meets with the most destructive, and sometimes with the most insidious forms of ear-disease ; yet if the danger be anticipated, and watched for, these ravages may in many cases be averted or arrested : the local manifestations may be very slight, yet generally the mischief begins in the throat, and proceeds thence along the Eustachian tubes to the tympanum and labyrinth, and in such cases topical applications and inhalations with inflation are of signal service. The changes in the throat and ear usually alternate with or follow attacks of interstitial keratitis ; the patient thus being threatened with both deafness and blindness.

In the very destructive inflammations of the tympanum, occurring after the post-nasal mischief in scarlet fever, there is a grand and hitherto sadly neglected field for preventive aural surgery ; and though having no experience of the operation at such a time, I believe with Dr. Cassells, that many an ear might be saved, and the most serious head-complica-

tions averted, by a timely incision of the membrane, providing for the escape of the exudations, and removing the pressure from the labyrinth. Considering the frequency of deafness, and of even deaf-mutism after scarlet fever, too much stress cannot be laid upon the necessity for every practitioner attending a case of scarlet fever, to be as much on the alert against the dangers of possible tympanic inflammation as he is against the generally-recognized perils of renal congestion.

I trust that the great advance which has taken place in Otology during the last few years, especially in Germany and America, will lead to a more rational treatment of ear diseases at their outset, and that we shall see fewer of those inveterate cases which are an opprobrium to the speciality and to the healing art in general.

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